



CHAPTER 5 | SPECIAL EXHIBITS



Harmful algal bloom in Lake Erie

Credit: NOAA

**SUMMARY BY APPROPRIATION***Dollars in thousands*

APPROPRIATION	2008 ACTUAL	2009 OMNIBUS	2010 REQUEST	INCREASE (DECREASE)
Operations, Research & Facilities (ORF)	\$2,942,277	\$3,045,549	\$3,087,537	\$41,988
ORF Recovery Act	0	230,000	0	(230,000)
Procurement, Acquisition & Construction (PAC)	985,207	1,243,647	1,391,279	147,632
PAC Recovery Act	0	600,000	0	(600,000)
Coastal Zone Management Fund	3,000	3,000	3,000	0
Fisheries Finance Program Account	0	0	0	0
Pacific Coastal Salmon Recovery	67,000	80,000	0	(80,000)
Medicare-Eligible Retiree Healthcare Fund	1,802	1,674	1,934	260
TOTAL APPROPRIATION	3,999,286	5,203,870	4,483,750	(720,120)

Transfers:**Operations, Research & Facilities**

FROM: Promote & Develop Fishery Products	77,000	79,000	104,600	25,600
Coastal Zone Management Fund	3,000	3,000	3,000	0
Pacific Coastal Salmon Recovery	67	0	0	0
Procurement, Acquisition and Construction	979	0	0	0
Fisheries Finance Program Account	0	495	0	(495)
Department of Agriculture	170,000	0	0	0
TO: Fisheries Finance Program Account	(235)	0	0	0
Subtotal, ORF	250,811	82,495	107,600	25,105

Coastal Zone Management Fund

TO: ORF	(3,000)	(3,000)	(3,000)	0
----------------	---------	---------	---------	---

Pacific Coastal Salmon Recovery

TO: Fisheries Finance Program Account	(67)	0	0	0
--	------	---	---	---

Procurement, Acquisition & Construction (PAC)

TO: ORF	(979)	0	0	0
----------------	-------	---	---	---

Fisheries Finance Program Account (FFPA)

FROM: ORF	235	0	0	0
TO: ORF	0	(495)	0	495

Promote & Develop American Fishery Products (P&D)

TO: ORF	(77,000)	(79,000)	(104,600)	(25,600)
FROM: Department of Agriculture (mandatory funds)	84,594	108,510	114,000	5,490

Subtotal, P&D	7,594	29,510	9,400	(20,110)
TOTAL TRANSFERS	254,594	108,510	114,000	5,490



SUMMARY BY APPROPRIATION

Dollars in thousands

APPROPRIATION	2008 ACTUAL	2009 OMNIBUS	2010 REQUEST	INCREASE (DECREASE)
Unobligated balances, rescission				
Operations, Research & Facilities (ORF)	(5,108)	0	0	0
Procurement, Acquisition & Construction (PAC)	(6,264)	0	0	0
TOTAL UNOBLIGATED BALANCES, RESCISSION	(11,372)	0	0	0

MANDATORY ACCOUNTS	2008 ACTUAL	2009 OMNIBUS	2010 REQUEST	INCREASE (DECREASE)
Damage Assessment & Restoration Revolving Fund	1,194	2,000	2,000	0
Fisheries Finance Program Account	27,389	1,996	0	(1,996)
Environmental Improvement and Restoration Fund	9,322	1,198	3,719	2,521
CZMF mandatory offsetting collections	(525)	(1,500)	(1,500)	0
Federal Ship Financing Fund	(156)	(773)	0	773
NOAA Corps Retirement Pay	23,119	24,272	26,112	1,840
Western Pacific Sustainable Fisheries	234	0	0	0
Limited Access System Administration Fund	10,268	7,444	7,444	0
TOTAL BUDGET AUTHORITY	4,313,353	5,347,017	4,635,525	(711,492)
Mandatory Funds	155,439	143,147	151,775	8,628

DISCRETIONARY BUDGET AUTHORITY	2008 ACTUAL	2009 OMNIBUS	2010 REQUEST	INCREASE (DECREASE)
Operations, Research & Facilities (ORF)	3,187,980	3,358,044	3,195,137	(162,907)
P&D Transfer	(77,000)	(79,000)	(104,600)	(25,600)
Procurement, Acquisition & Construction (PAC)	977,964	1,843,647	1,391,279	(452,368)
Medicare-Eligible Retiree Healthcare Fund	1,802	1,674	1,934	260
Fisheries Finance Program Account	235	(495)	0	495
Pacific Coastal Salmon Recovery	66,933	80,000	0	(80,000)
TOTAL DISCRETIONARY BUDGET AUTHORITY	4,157,914	5,203,870	4,483,750	(720,120)



ADJUSTMENTS TO CURRENT PROGRAMS (ADJUSTMENTS TO BASE) – REQUESTED \$52,080,000

Adjustments to Base (ATBs) are defined as increases or decreases to specific object classes that: represent the same level of effort as the current budget year, are outside of the agency management's control, are supported by specific documentation, and are a known cost (or fixed cost of doing business).

NOAA has requested the following increases for labor-related and non-labor ATBs:

ORF & PAC	SALARY & BENEFITS	OTHER OBJECT CLASSES	TOTAL
NOS	3.9	1.1	5.0
NMFS	9.9	2.3	12.2
OAR	2.4	0.7	3.1
NWS	13.7	1.8	15.5
NESDIS	2.0	0.5	2.5
PS	3.0	9.3	12.3
OMAO	1.8	-0.4	1.4
Total Discretionary- ATBs (Budget Authority)	36.7	12.7	52.1

Other Accounts (Mandatory Accounts)			
NOAA Corp Retirement	1.8	N/A	1.8
Total Appropriated ATBs	38.5	12.7	53.9

These increases for ATBs will help fund the agency's overall anticipated adjustments to the current programs. Program totals will fund the FY2010 Federal pay raise of 2.0 percent and annualize the FY2009 pay raise of 3.9 percent. In addition, program totals will also fund inflationary increase for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration.



NOAA MARINE AND AVIATION OPERATIONS

Planned Fiscal Year 2009 Operating Days of Ship Support for NOAA Programs

Operating days are days that a ship is away from home port and engaged in a project including days in any port other than home port or days transiting to or from a project. Days at sea are days that a ship is at sea engaged in a project or days transiting to or from a project.

The private sector and University National Oceanographic Laboratory System (UNOLS) ships generally track operating days rather than days at sea, so all days in the table below, including in-house ships days, are operating days. Operating days are typically 10 to 15 percent higher than days at sea.

	OPERATING DAYS	DOLLARS IN MILLIONS
In-house	3,390	\$113.5 O&M
In-house subtotal	3,390	\$113.5
Outsourced		
Private Sector	2,070	\$11.5
UNOLS	300	\$5.0
Contracts for hydro-graphic data*	780	\$31.2
Outsourced subtotal	3,150	\$47.7
Grand Total	6,540	\$161.2

**All hydrographic charters have been combined under contracts for hydrographic services. These contracts deal with area (square nautical miles), not operating days.*

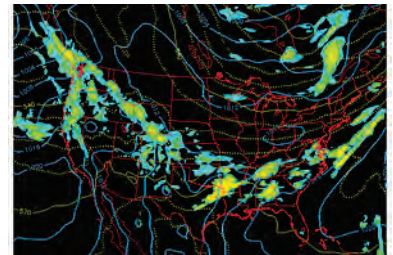


NOAA RESEARCH AND DEVELOPMENT

NOAA manages a preeminent research and development enterprise focused on three critical areas: climate, weather and air quality, and ocean, coastal, and Great Lakes phenomena and resources. The goal of NOAA's research enterprise is to develop, enhance and expand NOAA's suite of products and services for improved prediction and understanding of the environment. Data from NOAA's research allow decision makers to make informed judgments to prevent the loss of human life, conserve and manage natural resources, and maintain a strong and growing economy. The following are just a few of NOAA's research and development accomplishments in 2008:

NOAA's Earth System Research Laboratory Transitions Rapid Update Cycle (RUC) Model Upgrade To National Weather Service's National Centers For Environmental Prediction

The Rapid Update Cycle (RUC) model is a NOAA/NCEP operational weather prediction system comprised primarily of a numerical forecast model and an analysis/assimilation system to initialize that model. It was developed to serve users needing frequently updated short-range weather forecasts, including those in the US aviation community and US severe weather forecasting community. The FY 2008 upgrade included initialization with data collected from regional aircraft, the addition of radar reflectivity and lightning data (where available), as well as higher resolution surface observations and model physics. These additions will help to increase lead times, and reduce model biases and error.



Rapid Update Cycle (RUC)

Bycatch Days May Be Bygone With Creation of 'Eliminator' Trawl

A team of Rhode Island Sea Grant researchers were awarded the \$30,000 grand prize in the World Wildlife Federation's International Smart Gear Competition for a net called "The Eliminator." Cod and flounder are heavily restricted by federal fisheries regulations but often swim with haddock, and are caught together in commercial fishing trawlers. Fishermen then have to throw thousands of pounds of cod and flounder back into the ocean, where they will likely die. The Eliminator effectively solves this problem by taking advantage of haddock's tendency to swim up when faced with a net, when other fish swim down. The collaborative design and development of the Eliminator trawl is a great example of industry and scientists working together with fisheries managers to develop innovative solutions to reduce or eliminate bycatch. It's expected to allow fishermen continued access to haddock while allowing the cod stocks to rebuild.

First Ever Lake Erie Harmful Algal Bloom Bulletin issued

GLERL research continues to characterize harmful algal bloom (HAB) dynamics in the Great Lakes. Blooms of the cyanobacterial HAB *Microcystis* are common in parts of western Lake Erie and Lake Huron's Saginaw Bay. The excessive nutrient levels and shallow depth of these areas promotes *Microcystis* blooms, which are of great concern to human health due to the toxins they produce. In 2008, GLERL, working in close conjunction with NOAA Center for Coastal Monitoring and Assessment and the NOAA Center of Excellence for Great Lakes and Human Health, produced the first ever Lake Erie Harmful Algal Bloom Bulletin, which predicted *Microcystis* blooms based on satellite imagery in combination with hydrological, meteorological and limnological data. The bulletin was distributed to users throughout the Lake Erie watershed.



Lake Erie Harmful Algal Bloom



Integration of Radar Data from Other Federal Partners Enhances Weather Forecasts and Warnings

NOAA developed a new capability called the Supplemental Product Generator (SPG) which uses live data streams from FAA/DOD radars to create radar products that are integrated with NWS radar data and displayable on AWIPS. In 2008 and early 2009, connections to 45 FAA Terminal Doppler Weather Radars were established to dozens of NWS Weather Forecast Offices. New versions of SPGs have already been created and are in the prototype stage, accessing data from air surveillance radars, the FAA's ASR-11 and FAA/Department of Defense's ARSR-4. Products generated by the Supplemental Product Generators fill gaps in NWS radar coverage; provide backup capability for the NWS radar network; and allow forecasters to see storms from multiple points of view, leading to improved weather forecasts and warnings.

NOAA Implements Soil Moisture Observational Network



Drought Conditions

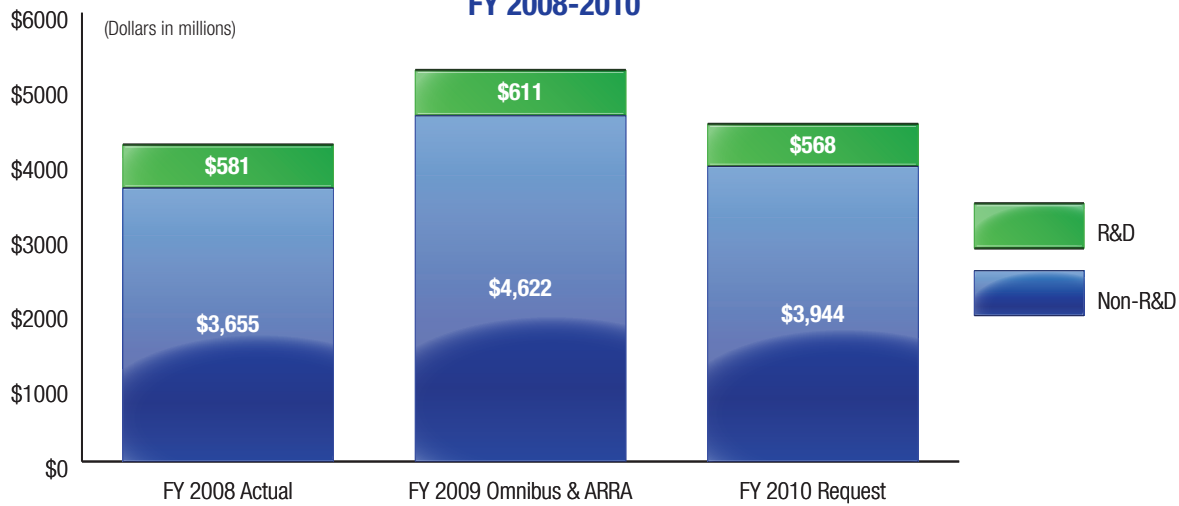
NOAA's Earth System Research Laboratory (ESRL) implemented a Soil Moisture Observational Network across southern Arizona's San Pedro River Basin, measuring soil moisture and temperature, and basic meteorological parameters at the surface (pressure, temperature, humidity, and rainfall). ESRL, working with the National Weather Service aims to improve flash flood forecasting and the understanding of how soil information (i.e., moisture, texture, and temperature) can be included in hydrologic models. Southern Arizona's San Pedro River recharges ground water storage and provides water for human needs and those of agriculture. However, during the North American monsoon season (July-September), heavy precipitation events can cause severe flooding in the San Pedro basin. Arizona's dry climate and a rapidly growing population increase the risk of impacts from both flash floods and drought.

The following charts display the scope and nature of R&D at NOAA. Key elements include the following for FY 2010:

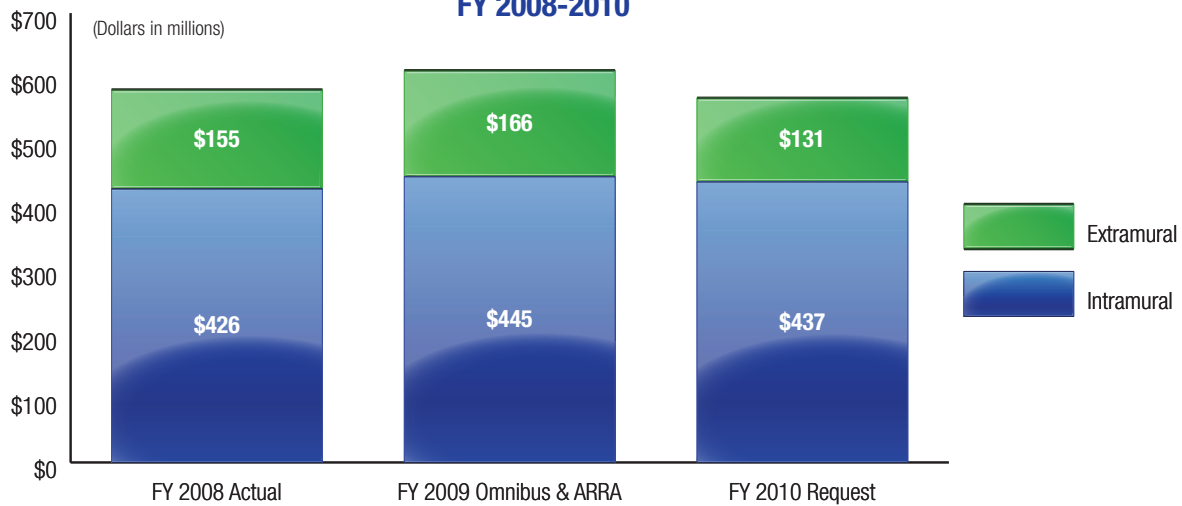
- R&D represents 12 percent of total NOAA funding in FY 2010.
- Seventy-three percent of NOAA's R&D is intramural and 27 percent is extramural.
- NOAA's R&D budget is 93 percent research and 7 percent development.
- NOAA's Office of Oceanic and Atmospheric Research (OAR, also known as "NOAA Research") manages 51 percent of NOAA's R&D. The remainder is distributed among NOAA's operational units.
- Major R&D efforts are supported by four of NOAA's mission goals: Ecosystems (32 percent), Climate (31percent), Weather and Water (14 percent), and Commerce and Transportation (1 percent). The 22 percent conducted for Mission Support primarily provides research vessels for research.

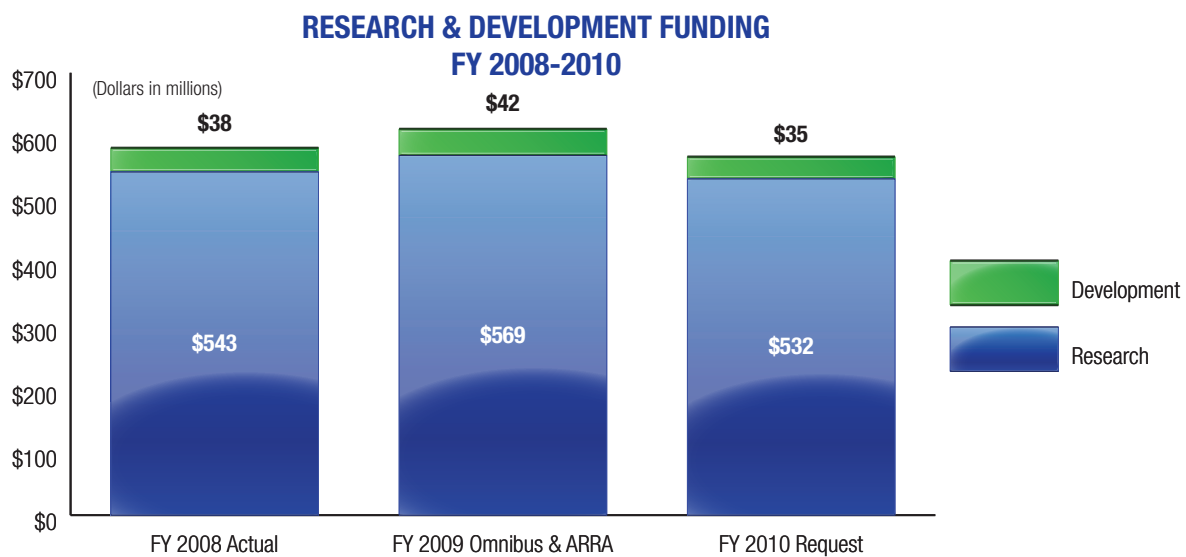


NOAA R & D FUNDING FY 2008-2010

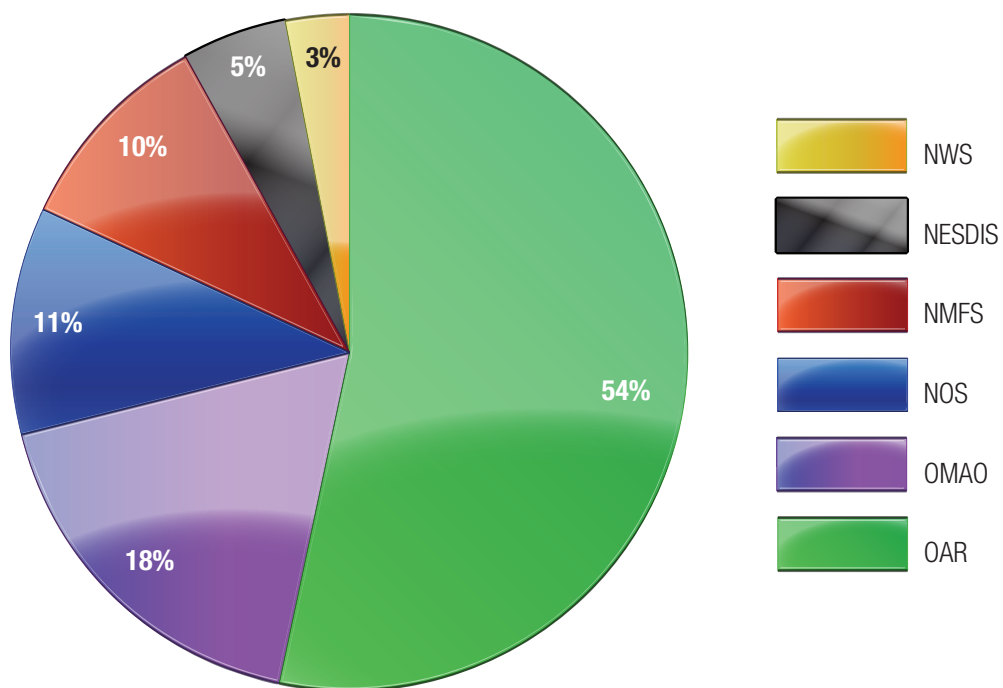


EXTRAMURAL & INTRAMURAL FUNDING FY 2008-2010



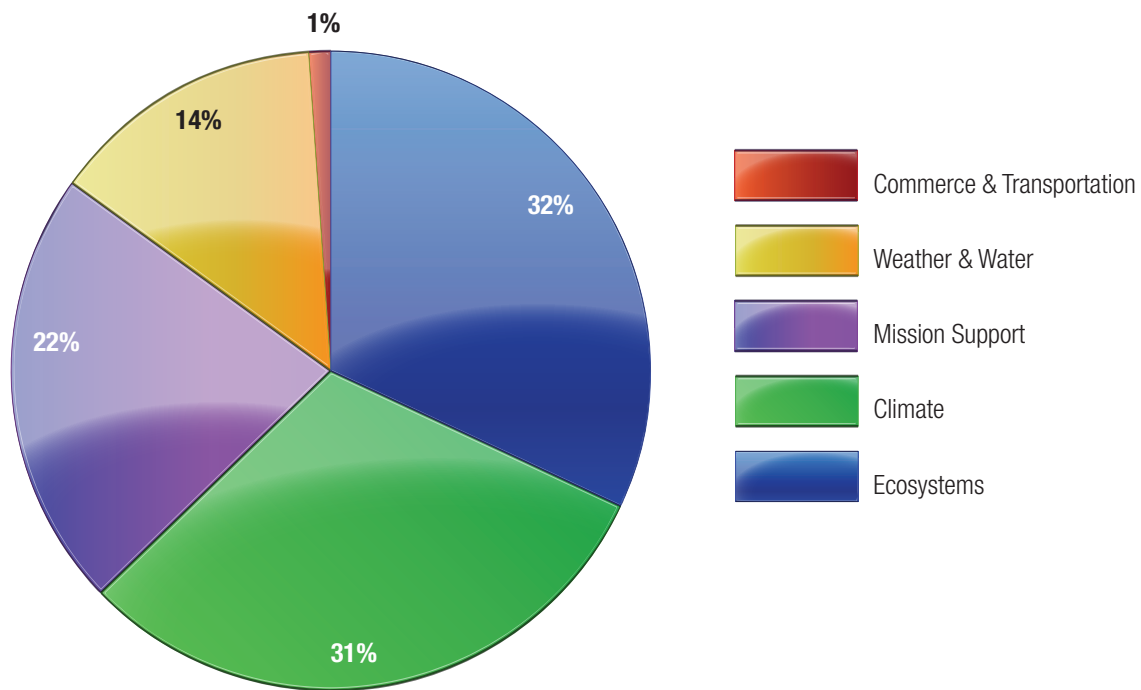


FY 2010 R & D BUDGET BY LINE OFFICE





FY 2010 R & D BUDGET BY GOAL





TERMINOLOGY

The reader should be aware of the specific meaning of several terms as they are used throughout this budget summary:

“FY 2008 Omnibus:”

Fiscal Year (FY) 2008 Appropriations, not including Farm Bill (PL. 110-234) and Continuing Resolution (PL. 110-329) Supplemental Funds

“FY 2009 Omnibus:”

Fiscal Year (FY) 2009 Appropriations, not including American Recovery & Reinvestment Act (ARRA) Supplemental Funds

“FY 2010 Request:”

Fiscal Year (FY) 2009 Enacted, less Terminations, plus Adjustments-to-Base, and Program Changes

“Program Change:”

The increase/decrease over the FY 2010 base, which is the FY 2009 Omnibus minus Terminations, plus Adjustments-to-Base

“Adjustments-to-Base:”

The estimated FY 2010 Federal Pay raise of 2.0% and the annualized FY2009 pay raise of 3.9%. Program totals will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from GSA. In addition, ATBs include unique/technical adjustments to the base program.